

CLAIMS

What is claimed is:

1. A pneumatic radial tire, the tire having a carcass, a tread, and a belt reinforcing structure located radially outward of the carcass and radially inward of the tread, the carcass comprising a reinforcing ply structure extending between a pair of bead portions, a pair of sidewalls, each sidewall located radially outward of one of the pair of bead portions, and an insert located in each sidewall, wherein
each bead portion has a bead heel, the axial distance between the two bead heels before the tire is inflated being equal or less than after the tire is inflated, whereby the inserts are not subjected to additional stress upon inflation.
2. The tire of claim 1, wherein the insert in each sidewall is located axially inward of the carcass reinforcing ply structure, outward of a tire innerliner.
3. The tire of claim 1, wherein the bead portions comprise bead cores, one bead core located in each bead portion, and the reinforcing ply structure is comprised of a pair of parallel cord plies, the ends of one of the parallel cord plies extending about the bead cores, and the inserts are located between the pair of parallel cord plies.
4. The tire of claim 1 wherein the self-supporting run-flat insert is formed of two different elastomeric materials.
5. The tire of claim 1 wherein bead portions comprise bead cores, one bead core located in each bead portion, and the insert has a radially outer end and radially inner end, the radially outer end being located radially inward of the belt reinforcing structure and the radially inner end of the insert is located radially outward of the bead cores.
8. A tire and rim combination wherein the tire is mounted on the rim,
the tire having a carcass, a tread, and a belt reinforcing structure located radially outward of the carcass and radially inward of the tread, the carcass comprising a reinforcing ply structure extending between a pair of bead portions, each bead portion having a bead heel with the axial distance between the opposing bead heels being a

distance BW, a pair of sidewalls, each sidewall located radially outward of one of the pair of bead portions, and an insert located in each sidewall and

the rim having a pair of opposing bead seats and opposing rim flanges, each bead seat and rim flange meeting at a junction, the axial distance between the junctions being a distance RW, the rim distance RW being greater or equal to the tire distance BW,

wherein the tire is mounted on the rim such that the bead heel is in contact with the rim junction, and after inflation of the tire on the rim, the inserts are not subjected to additional stress upon inflation.

7. A method of mounting a self-supporting run-flat pneumatic tire, the method comprising the following steps:

a) forming a cured pneumatic tire, the tire having a carcass, a tread, and a belt reinforcing structure located radially outward of the carcass and radially inward of the tread, the carcass comprising a reinforcing ply structure extending between a pair of bead portions, a pair of sidewalls, each sidewall located radially outward of one of the pair of bead portions, and an insert located in each sidewall, wherein each bead portion has a bead heel at the axially outermost point of the bead portion, the axial distance between opposing bead heels being a distance BW,

b) providing a rim upon which the tire will be mounted, the rim having a pair of opposing bead seats and opposing rim flanges, each bead seat and rim flange meeting at a junction, the axial distance between the junctions being a distance RW, the rim distance RW being greater or equal to the tire distance BW, and

c) mounting the tire on the rim wherein the bead heel is in contact with the rim junction.